

THE MOTOR AGE

VOL. I.

CHICAGO, JANUARY 25, 1900.

NO. 20.

ENTERED AT THE CHICAGO POST OFFICE AS SECOND-CLASS MATTER.

THE MOTOR AGE is published every Thursday by THE CYCLE AGE COMPANY, at 324 Dearborn St., Chicago.
Eastern Office: 1427 American Tract Society Building, New York City.
Subscription price in the United States, Canada, and Mexico, \$2.00 per year; foreign countries (in postal union), \$4.00 per year, payable invariably in advance.
Advertising rates on application. Copy for changes in advertisements must be in hand the Friday previous to publication to insure insertion.

EXHIBIT IS NOT LARGE BUT GOOD

AUTOMOBILES AT MADISON SQUARE SHOW IN NEW YORK ARE LIMITED IN NUMBER BECAUSE OF LACK OF SPACE—MANY REPRESENTATIVE TYPES SHOWN—VEHICLES FOR BOTH COMMERCIAL AND PLEASURE PURPOSES—DISPLAY OF ACCESSORIES SMALL—VISITORS SHOW MORE THAN PASSING INTEREST

New York, Jan. 22. Staff correspondence.—To the expert or enthusiast, the motor vehicle exhibit at the Madison Square cycle and automobile show is a distinct disappointment, considering the fact that one has been led to believe, because of the rapidly increasing number of new automobile manufacturers, that the industry has been developing with great celerity. From advance press reports it has been apparent that the management has endeavored to attract popular interest by calling attention to the unusual amount of space, reserved for horseless carriages:

It must be taken into consideration, however, that whereas one ordinary cycle show space will hold ten or a dozen bicycles, a like number of motor broughams or stanhopes would require some fifteen or twenty similar spaces. Accordingly the eighty show spaces reserved from the total 245 does not furnish room for the display of as many vehicles as the unperceiving public might be led to assume, hence, the limitations to this motor vehicle exhibit are merely the unavoidable limitations of space, and many there are in the industry who could not find suitable room for showing to the public the vehicles which they have ready for examination, criticism and comparison.

The exhibits of the individual houses represented are indeed characteristic and

so nearly complete in each instance that a very good idea of the possibilities of individual and varied designs of automobiles may be easily gathered, even from a cursory viewing of the display.

Visitors Are Interested

The disposition on the part of less critical visitors at the show is clearly to be friendly to the automobiles, the automobile exhibit and the automobile industry at large. Soon after the opening of the doors on the first night, the crowds began to drift toward the automobile space and, while the interest displayed by the majority might not have been exercised in a highly learned or technical fashion, its enthusiastic nature was sufficient evidence of the willingness on the part of the American masses to keep abreast of progress, and to offer each new development in the motor vehicle game a hearty welcome.

To an automobile expert it might prove tiresome to stand in the crowds around the vehicle booths and listen to the many highly ignorant remarks and criticisms offered without any compunction regarding the ears of others. Such an one might be extremely bored to hear Mamie say: "Oh, Madge, where is the trolley for that funny electric wagon?" Still, however, the fact that Mamie and all of the rest of the people, who are visiting the show,

desire to learn at least a few things concerning the automobile is conclusive evidence that, when the industry has grown so that it shall feel the need of the backing of a receptive public, such backing will come from the masses, as well as from the few. The automobile appeals to all. This exhibit is proving it, and the mistakes of the people in pronouncing that alluring word, automobile, may be readily pardoned in view of the fact that they are as favorably inclined to its widespread adoption as any people representing all classes of commercial and social life might possibly be.

Exhibits Are Representative

The various exhibits have been very carefully arranged and each firm has endeavored to show its representative types. The display of large fashionable equipages is a source of education in itself, as it brings to public notice styles and types of turnouts, whose characteristic points might never have been noticed in horse drawn vehicles for similar purposes.

For Commerce and Pleasure

The Riker Electric Vehicle Co. of Elizabeth, N. J., has nine spaces in which it shows seven different styles of vehicles, of which two are delivery wagons used by commercial houses in New York city. The balance are designed for private use and include a light runabout, a doctor's phaeton, a break, a theater omnibus and a cab.

The Indiana Bicycle Co. division of the bicycle trust occupies a like number of spaces in which it shows two electric vehicles, one of which is a park phaeton and the other the usual style of break.

In spaces 165 to 168 The American Electric Vehicle Co. of Hoboken, N. J., formerly of Chicago, exhibits two runabouts, a break and a delivery wagon. The runabouts are particularly attractive, owing to the extremely graceful lines of a vehicle in which the wearing qualities are not sacrificed for weight.

Has Five Speeds

The General Electric Automobile Co. of Philadelphia, which is connected with the General Electric Co. of Philadelphia, has on exhibition a runabout dos-a-dos, that created considerable interest at the late

carriage manufacturers' exhibition in Indianapolis. This vehicle weighs 2,000 pounds including the battery, and is driven by two motors. It has five speeds forward and two on the reverse and extreme mileage is given of thirty-five miles for the batteries, which can be recharged in four hours even when run entirely out. This company owns jointly with the General Electric Co. several valuable patents on controllers. It is also devoting considerable time and attention to the production of delivery wagons and trucks, having already built a truck which is in use by a Philadelphia house. As high as forty-five hundred pounds have been carried without trouble, although the vehicle was not designed for carrying over a ton and a half. This company has found it practical to use the Collins axle with certain modifications.

Furnishes Motors

The Eddy Electric Mfg. Co. of Windsor, Conn., well known as manufacturer of electrical motors for stationary power, shows a number of small carriage motors, also a complete running gear with motor wheels and steering gears attached. It is making a specialty of this particular line, catering to those who desire a vehicle body of their own design, also to those manufacturers who are not in a position to make the steel parts of a carriage. The motors shown are of the company's standard form of construction and are the result of years of experience in this particular line.

Brougham From Berlin

The Automobile Forecarriage Co., with offices in New York, Paris, Berlin and London, shows a vehicle that is attracting a great deal of attention. The vehicle is one quite familiar to foreigners or those who have been abroad, as in style it differs widely from the American type. It is a gasoline driven brougham with the motor contained in the forward trucks. The amount of machinery, oil cups, starting levers and steering gears, rather appall those who are accustomed to those vehicles so far produced in this country and in which the mechanism has as far as possible been concealed. It is the intention of this company to eventually build these

carriages here, but for the present will import on any orders. The machine shown was built in Berlin.

The Canada Mfg. Co. of Carteret, N. J., which has been organized for a number of years, and which has devoted most of the time in perfecting a type of vehicle very popular in France, shows two quad-rucycles, each seating a passenger in front as well as the operator immediately behind the front seat. The motor power is gasoline, the motor of the DeDion type. The construction of the frame of this vehicle differs from anything so far shown here in a number of features, the principal one being two side rails which give extreme rigidity to the driving parts. The motors are one and three-quarter horse power, using no water.

The Oakman Motor Vehicle Co. of Greenfield, Mass., show one runabout of the hydrocarbon type peculiar to this company's well known product.

Foster's Steam Wagon

Foster & Co., of Rochester, N. Y., have two steam wagons and one electric on exhibition. This company does not make any special claim for the individual parts of their construction, but have preferred to adapt an engine and boiler to a vehicle that had been tested in other lines. The vehicles shown seem to be, from the outside, an enlarged product of the Locomobile Co., as the running gear in design is exactly the same.

The boiler is a fire tube boiler and the engines are double cylindered, with a reverse link motion. The burner is of special design, constructed in a coil and so arranged that it is very easily started. The method of starting comprises the insertion of a spoon filled with gasoline or kerosene which produces in the coil a sufficient quantity of gas for it to work automatically before the liquid in the spoon is exhausted.

The engine and boiler are hung solidly on the frame, but not together. Three jet cocks are used in place of a water gauge. The turning of a valve feeds the boiler from the automatic pump which works continuously.

The engines develop about six horse power, which gives a maximum speed, except in cases of special gearing, of

twenty miles an hour. Twelve gallons of water are carried in a tank surrounding the boiler and through which the exhaust passes. In the larger vehicle six gallons of gasoline are carried under the foot board. The vehicle is braked by a band brake on the differential gear and operated by the foot.

The electric vehicle shown is a runabout weighing 940 pounds and carries a forty cell battery of the larger type. The mileage of this vehicle is given as one hundred miles before recharging becomes necessary. The motor is two and a half horse power and located handily beneath the foot board, and in place of gearing a chain is used, thus it is claimed, doing away with a great deal of the humming sound usually given forth by these vehicles. This company is also building delivery wagons and trucks, using both steam and electricity for power. In the steam delivery wagons no exhaust will be visible, as the builders have perfected a means of condensing the exhaust and retaining and returning the water so condensed.

Light Park Runabout

One of the pleasant surprises of the exhibit is a park runabout shown by the Loomis Automobile Co. of Westfield, Mass., which seems to be an Americanized type of the popular French gasoline quadrucycle. This vehicle is intended to seat two, weighs three hundred and fifteen pounds, and is driven by a two and one-quarter horse power gasoline motor of the DeDion type, but made in this country.

No carburettor is necessary, as the manufacturers claim to have perfected an automobile mixer which does away with the necessity for a cumbersome carburettor. The motor shown is capable of a speed of twenty-eight hundred revolutions per minute and is guaranteed not to miss when running under two thousand and using the jump spark form of ignition.

Many Carriage Lamps

A speed of 18 miles is given as a limit and a sufficient quantity of gasoline to cover fifty miles of ordinary riding can be carried. Under ordinary conditions the motor is allowed to run when the vehicle

is at a standstill, as it is necessary to start the engines by means of a crank at first. Dry batteries are used in preference to the dynamo. The style of the vehicle is particularly attractive and it is safe to predict that the coming season will see this company's output tested to its utmost, as well as other makers following their lead.

Nearly every manufacturer of bicycle lamps has had his attention called to the possibilities of the carriage trade and more especially the motor vehicle. The exhibits of the Badger Brass Mfg. Co., Bundy Lamp Co., Manhattan Brass Co. and 20th Century Mfg. Co. show in each case special styles and sizes of acetylene lamps, designed expressly for vehicle use. The elaborate finish of most of these lamps makes an ornament that harmonizes with the carriage on which it is used.

But One Bell

The only alarm or bell intended for motor vehicle use exhibited is the new design of the New Departure Bell Co. of Bristol, Conn. This bell is intended as a foot bell and is furnished with an adjustable push rod to allow for the various thickness of floors.

Motor Vehicle Tires

The Diamond Rubber Co. of Akron, O., has a modestly decorated space and shows several sizes of the special vehicle tires which have proved so serviceable in the cab service of New York city. A full size illustration of a cross section of the four-inch pattern shows the construction detail of the tire.

The International Automobile & Vehicle Tire Co. of New York city, exhibits its full line of vehicle tires, as well as the New England Tire Co.'s solid tire now controlled by it. The egg shaped pneumatic tire is meeting with success wherever introduced, it is said.

The American Dunlop Tire Co. of New York, is now active in the vehicle tire business and shows automobile double tube tires up to three inches in diameter, though it will manufacture tubes as large as five inches upon order. These tires are fitted to automobile rims by multiplex wires. It is pointed out by the company that the excess of protuberance of double tube tires over those of the hose pipe type, by reason of the shallow rim used by the Dunlop company, makes possible an economy of rubber equivalent to a saving of some forty pounds on a set.

The Ducastle Tire Co. of Philadelphia is showing a detachable solid tire for use on heavy vehicles.

The Consolidated Rubber Tire Co. of New York city is showing the Kelly vehicle tire.

Other Automobile Accessories

The Gleason-Peters Air Pump Co. of New York city makes its pumps for automobile and pneumatic wagon tires the feature of its extensive exhibit of inflators. A lever pump giving a 400-pound pressure and a portable carriage pump for emergencies are features of the display. A geared three cylinder storage pump with electric motor attachment for shop and stable use attracts much attention.

Peter Forg, of Somerville, Mass., has an exhibit of automobile sprocket wheels in all sizes and thicknesses for any pitch chain, as well as a sample line of miscellaneous parts that prove of great interest to automobile makers and repairmen.

The Jos. Dixon Crucible Co. of Jersey City exhibits nearly everything in the graphite line, but is kept busy talking its special cylinder compound intended for use in gasoline motors.

The American Roller Bearing Co. of Boston shows several wheels equipped with its roller bearings.

CURRENT THOUGHT AND PRACTICE

DEVICES AND SCHEMES BIDDING FOR APPROVAL AND ADOPTION—DEVELOPMENT OF ELECTRIC ACCUMULATORS—TWO FRENCH DEVICES—SUBSTITUTE FOR THE MOTOR TRICYCLE TRAILING CART

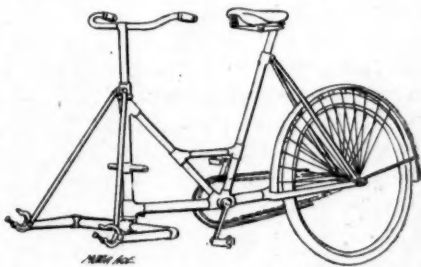
A NEW ACCUMULATOR

An accumulator has been invented by Dr. Majert of Germany, which the Electrician of London says may enable electric vehicles to compete seriously with the oil and steam automobiles in all fields. In describing the construction of the accumulator the Electrician says: "To begin with, the positive and negative plates are of different types. The former, in which the chief interest of the battery lies, are of the Plante, while the latter are of the Faure type, and consist of frames divided up by a lattice of peculiar construction. The pattern, which has been adopted for central station work, consists of a frame divided into several portions by perpendicular bars, which are connected by flat, obliquely placed cross pieces, which form an angle with each other where they meet the perpendiculars. In the plate which has been divided for traction work the frame is divided by vertical and horizontal rods, crossing each other at right angles. The openings in each end plate are narrower on one side than on the other, while in the center plate the openings contract from one side to the middle, so that a firm hold is given to the pastilles. The frames are filled in with a paste admixed with some substance which renders it porous. The positive electrodes are made of plates of rolled lead, which are furrowed with fine, deep grooves, so that their surface appears something like the under side of a mushroom. This grooving is effected by means of a sort of planing machine with a tool whose cutting edge is at an angle of 70 degrees with the plate, and turns up shaving after shaving without completely detaching it, thus enormously increasing the effective area of the electrode, while the fine laminae retain between their surfaces the peroxide formed during charge. Expansion of the working surface can take place without affecting the supporting

portion of the plate. The battery is made in two patterns, which have been designed for central station and traction work respectively, and from a report on a year's working of 100 batteries of the latter type, containing 20,000 positive electrodes, it appears that a small number were injured by a careless short-circuit of the battery, while in regular work only eighteen had to be replaced. This is an encouraging result when one considers the heavy strain on batteries which is involved by the constant stopping and starting of cars and the jolting to which they are subjected. If the Majert accumulator will give equally good results when used for the propulsion of vehicles on ordinary roads, it may be very valuable for motor carriage work."

TRAILER FOR TRICYCLE

The accompanying illustration shows the design of an English trailer intended to be attached to the rear of a motor-tricycle, which latter style of machine is proving very popular in the snug little isle, and is meant to take the place of the trailing cart so popular among the French and which is also largely used in



England. The makers claim for it great advantages over the cart, among others being the ability of the rear passenger to give assistance to the forward one in ascending grades or traversing bad stretches of road where the motor is unable to

furnish sufficient power, and also in crowded traffic where the motor can not be used at all. It is made in two designs, one for ladies and one for gentlemen.

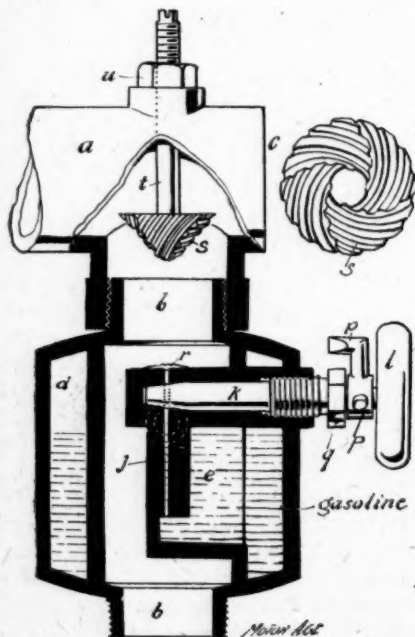
LAMBERT CARBURETTOR

The Lambert carburettor, of which illustrations are shown, is described by La Locomotion Automobile of Paris as follows:

The horizontal tube a of this new carburettor is arranged to communicate by means of any convenient style of valve, with the interior of the cylinder. It is closed at its end c and communicates with the vertical tube b which is surrounded with a gasoline reservoir d.

This reservoir is provided with the chamber e in the side of the tube b. This reservoir, and consequently the chamber e constantly receives fresh gasoline through the tube f, by aid of a small pump actuated by the motor itself. The level is kept constant by the aid of the overflow tube l.

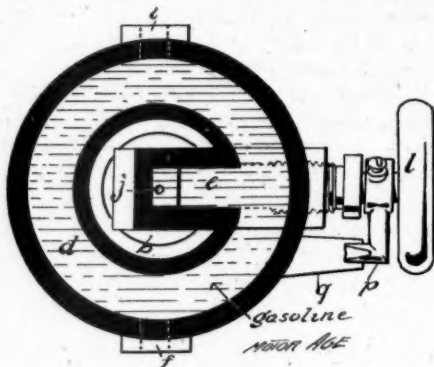
At the end of the chamber e starts the vertical canal j which is exactly in line



with the center of the tube b and which may be opened or closed by aid of the cock k, in the bushing o. The position of

this cock can be regulated by the handle l, up to its limit by the check q on which is the finger p.

In consequence, at every forward stroke of the piston, the tendency towards forming a vacuum results in drawing the gasoline through the canal j and its emerging



into the tube b in the form of a jet, the volume of which is regulated by the cock k. This jet strikes the inverted cone s, after having passed through the metal gauze r. This cone s is provided with spiral grooves which complete the atomizing of the liquid, commenced by its passing through the metal gauze.

The air is drawn in through the lower part of the tube by the strokes of the piston and becomes impregnated with the gasoline vapor as it passes to the tube a which leads to the motor.

A FRENCH GEAR CHANGE

The accompanying illustrations show a French speed changing device designed for use on tricycles, quadricycles and "voiturettes" and is manufactured at Paris by H. Petitjean & F. Sevette. While great things are claimed for it, it is not up to the standard of excellence which will satisfy the American public, much less the American engineer. It is, however, about as good as anything offered for this purpose by any of the French makers and a description of it is therefore given.

Fig. 1 shows the apparatus at the moment of changing from the high to the low speed or vice versa. Fig. 2 shows the apparatus disengaged entirely, the fine dotted lines indicating the position at

high speed and the other dotted lines the position at low speed.

On the motor shaft a, is mounted a clutch b which slides in a feather on the shaft and therefore revolves at the same speed as the motor shaft.

When the vehicle is being driven at the high speed, the clutch b is directly in engagement with the crown teeth of the sleeve c which is loosely journaled on the motor shaft a. On the opposite end of this sleeve c are the spur teeth m which engage a large spur wheel on the differential gear.

When the vehicle is driven at the slow speed the spur teeth of the clutch b engage with the pinion e which is firmly attached to the countershaft g as is the pinion f. The motion is communicated through these reducing pinions e and f to the spur h of the roller clutch n between which and the sleeve c are the rollers i, designed to wedge and drive the sleeve c when it is actuated by the clutch n, but to allow this clutch to run free when the sleeve is being driven at the same speed as that of the motor shaft a.

The clutch b receives its sliding motion from the fork k carried on the shaft l actuated by a lever, within reach of the operator.

In passing from the high to the low speed the clutch b is, for a moment, simultaneously in engagement with both the

of the latter gradually slackens until it becomes no more than that of the roller clutch n, which, is now actuated from the clutch b through spur gears e and f and the shaft g, at which time the rollers wedge and the clutch n gives to the sleeve c the

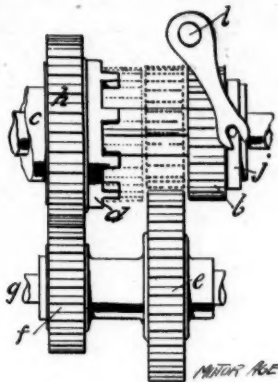


Figure 2.

same rotary speed that it receives from the pinion f. In this manner, the low speed is always in engagement before the high speed is disengaged.

The reverse is true in passing from the low to the high speed but, alas, the same results can not be obtained, viz., a smooth change of speed. Nor is there any provision for a gradual starting of the low speed. The engine may run, however, when the gearing is entirely disengaged.

IMPROVED STORAGE BATTERY

A patent was issued December 26 to Charles Lindenberger, on an improvement in a storage battery, having for an object to provide a cell of light yet strong construction and with the elements so arranged as to afford a maximum surface area within a minimum space. The casing of the cell is of a conducting material, preferably aluminum, and comprises a tray-like lower portion and a cover insulated therefrom by a soft rubber band interposed. From the side wall of both upper and lower portions of the casing are projecting strips forming the positive and negative electrodes. Arranged around and against the inner surface of the side walls of the tray-like portion is a lining of hard rubber extending into the cover space. Within the interior of the rubber

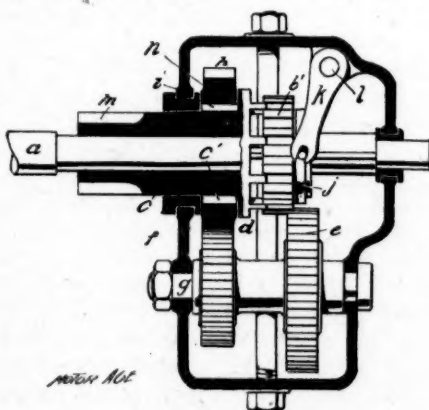


Figure 1.

crown teeth d of the sleeve c and with the spur teeth of the pinion e, as shown in Fig. 1, but, as this clutch b becomes completely disengaged from the teeth d, and, consequently, from the sleeve c, the speed

lining are the battery elements, which are composed of strips or ribbons of sheet lead perforated in such a manner that projections are formed upon one side and a corresponding opening upon the reverse side. These strips are coiled into a square form, the projections serving to separate the surfaces of the coiled strip, and the spaces thus formed are filled with active material. Two flat coils of this kind form an element, one being placed on the bottom of the lower part of the tray and separated from the other ele-

ment by sheets of asbestos paper and absorbent pads. After the elements are placed, sufficient pressure is applied to seal the casing, and the whole is then immersed in melted paraffin, which serves as an exterior insulation and perfects the sealing process. It is claimed that this arrangement of parts prevents the possibility of bucking, change of shape or dropping out of the active material, and also allows the elements to be placed close together, thereby reducing the internal resistance to a minimum.

IT MUST BE SOUR GRAPES

The Horseman, in its current issue, prints an article relating to the expense of operating an automobile and evidently intended to "jolly" those horsemen who are wondering if indeed a time is coming when streets will be clean and transportation rid of noisy hoof beats and the bang-tail mare no longer considered a paragon of beauty, and to stimulate drooping faith in the infallibility of horseflesh as the medium for "getting there." The article is headed "Costly Fun," and is as follows:

"Just now some companies with plenty of money behind them are endeavoring to reap a financial harvest from the novelty of the automobile by offering the use of these vehicles to the public in most of the large cities. The appearance of these ungainly things on the street has caused many people to ask what it costs to run one of them for a year or for any other stated period of time, and so far about the only figures that have been available have been those of Albert C. Bostwick, Nen York, who gave the list of expenses as something enormous, beginning with the wages of an engineer at \$720 a year and his board, and the price of two new motors at \$400 each, down to some trivial money paid out for repairs to tires. A gentleman who has recently returned from Paris gives in one of the Philadelphia papers some figures relating to the cost of running an automobile in that city, and when we add to these the extra al-

lowance that must be made for help in this country, we find that only a rich man can afford to bother with the wild and untamed auto. Here are the figures: Gasoline, \$87.50; lubricating oil, \$5.45; repairs to the body of the carriage, \$102.50; repairs to the machinery, \$185; sundries, \$64.80; repairs to tires, \$27.50; depreciation, \$150; tax, \$50; and a servant's wages, \$200. These figures being added up give a total of \$872.75, and it is hardly to be thought that a man to run and take care of such a rig can be obtained in this country for \$200 per year. Mr. Bostwick said that it cost him \$720 and board per year, or about \$1,100, so that we will have to add \$900 to the \$872.75 to get at what it costs to run a gasoline auto in America. That amounts to \$1772.75, and that includes, of course, the abominable, scarcely-to-be-endured odor that goes with a gasoline motor of any kind, without extra charge. We doubt if at that rate of going the auto will ever become the vehicle of the masses even in this extraordinarily rich country. A man would better buy a home each year and put away the \$2,500 or \$3,00 it costs to buy an auto as a sort of sinking fund against the proverbial rainy day."

The horsemen of this country must be a bright lot of men if the only argument necessary to convince them that the automobile is but a fad and a passing joke be to call it by such childish and peevish

cognomens as "ungainly thing." Thing—let some ultra-enthusiastic horseman astride some noble equine go a galloping in to a motor delivery kamon or brougham and he will have good cause to think it is more than an ungainly thing. But aside from the nonsense of deprecating the automobile industry the Horseman fails to show good sense in pointing out such an extravagant item of expense for operating a horseless carriage as that mentioned in the above article.

In the first place, the gentleman said to have investigated the expense proposition in Paris is purported to be a lawyer and merely gives his figures as having been obtained from a friend. Is there any sense in thinking that the body of an average motor carriage would need over one hundred dollars' worth of repairs in a year? Why not get a new body? What must the operator have done to his vehicle to bring about an expense of \$185 for machinery repairs? What were the \$64 worth of sundries for? After having spent \$379.80 to keep a vehicle in good trim, should its depreciation amount to \$150? Does the Horseman know that horseless vehicles are not taxed \$50 annually in this country? How much would the Horseman think ought to be paid a man capable of taking care of a finely bred team of thoroughbreds, pulling a crested brougham?

Concerning the estimate of expense said to have been furnished by Mr. Bostwick, the best answer is the experience of the companies operating motor cabs and carriage lines in New York and Chicago. If the expense of operating and maintaining such vehicles were so abnormally high, could these companies afford to do business in competition with the whip and "git-ap" lines?

After ten months' experience with an electric delivery wagon the chief engineer of a Boston baker states that the running expense per mile of such a wagon has been but 1½¢ per mile and that the outlay for care and repairs amounted to no more than the cost of keeping one horse shod.

It is not the automobile that is worrying the Horseman. It is the fact that the term may also be expressed in two words, one of which is "horseless," and perhaps this journal, which is fearful lest some weak minded person be led astray and spend the price of a home in a "wild and untamed auto" has noticed that a company which operates electric hansoms and carriages on the streets of Chicago is establishing its headquarters in a recently remodeled building just next door to a Michigan avenue livery stable from whose grated alley windows tired horses blink and wink and look in vain for the rest of their tails.



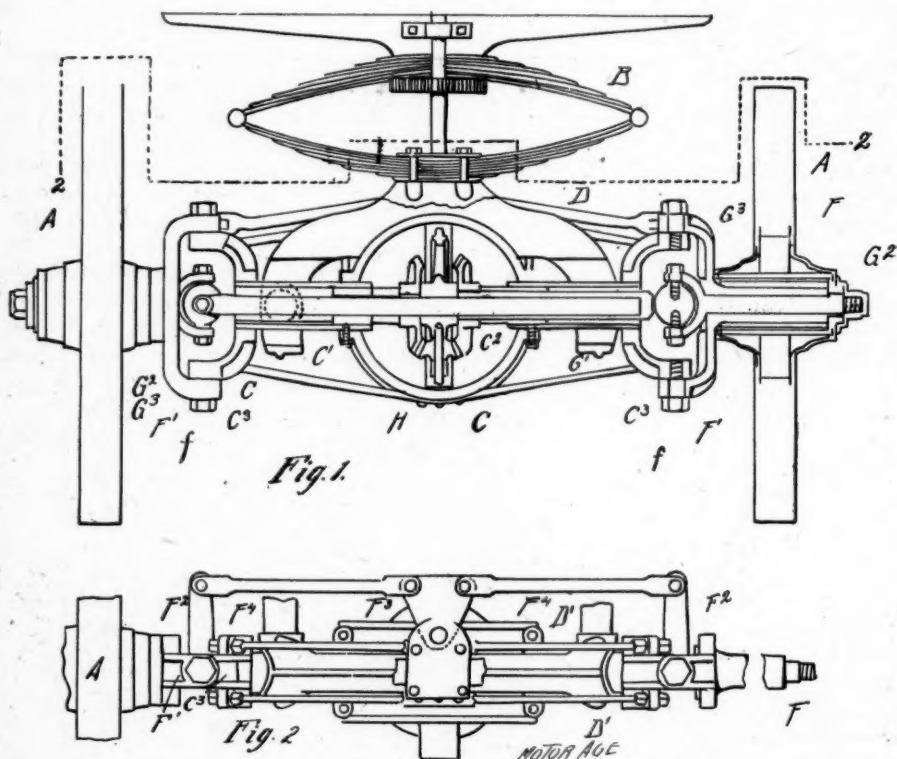
GLEANINGS FROM THE PATENT OFFICE

CHICAGOANS INVENT A METHOD FOR DRIVING, STEERING DIFFERENTIATION AND ALLOWING FOR VERTICAL PLAY OF THE SAME PAIR OF WHEELS—OTHER INVENTIONS OF VARYING MERIT

McMULLIN'S FRONT DRIVING

No. 641,811, to C. H. Hildebrandt and F. R. McMullin, Chicago.—Mr. McMullin is in the automobile business in Chicago and the device, of which he is one of the patentees, shows, as would be expected, much more than the ordinary amount of merit. The invention relates to the driving of motor vehicles by means of the front

accomplishing both steering and driving by means of the front wheels, but at the same time provide means for permitting the wheels to accommodate themselves to the inequalities of the road without racking the vehicle or interfering with the steering or driving. That value attaches to a device that will accomplish these various functions, there is no doubt. The de-



wheels which are steering wheels, as well, not, of course, preventing the use of the rear wheels as drivers, at the same time. In practice, indeed, it is the intention to use all four wheels for driving purposes.

The specifications not only show an apparently thoroughly practical method of

sirability of driving by means of all four wheels of a vehicle is admitted very generally by automobile engineers, the mechanical difficulty in the way of so doing being all that has prevented the general adoption of the four driven wheels.

Fig. 1 is a front view, partly in section.

of a vehicle equipped with the invention.

Fig. 2 is a plan section taken on lines 2 2 of Fig. 1.

A A represent the front wheels of the vehicle and B an elliptical spring of the usual form, rigidly attached at its lower part to the yoke D and at its upper part to the body of the vehicle. Fitting in the arc in the lower part of the yoke D is the cylindrical shaped member C, surrounding the differential gear H, which is driven in any convenient manner, imparting motion to the two-part telescoping shaft G G1.

The cylindrical member C is rigidly connected at either side with the tubular members C1 and C2 in which are rotatably journaled the driving shaft G G1. The outer ends of the cubular members C1 and C2 are provided with fork arms C3 C3 to which are pivoted at f f, the fork arms F1 F1 of the hollow stub axles F F on which are loosely journaled the wheels A A. The telescoping driving-shaft G G1 is provided with the universal joints G3 G3, and the ends G2 G2 of this driving-shaft pass through the hollow stub axles F F, and are provided at their ends with nuts, washers and bolts by which they are rigidly attached to the vehicle wheels A A. The fork arms F1 F1 of the hollow stub axles F F are provided, at their rear parts with levers F2 F2 through which the steering is accomplished by the arms F4 F4 and lever F3.

The braces D1 D1 are provided to strengthen the members C, C1, C2 C3. Means are provided for holding the cylindrical member C in constant contact with the yoke D but it is permitted to move in the arc of the yoke to allow the wheels to adapt themselves to the inequalities of the road without interfering with the steering or driving.

Eight claims are allowed of which the following is the first:

"The combination with a frame for supporting the front part of a vehicle body, of a rotative shaft mounted in said frame, shaft-sections joined to said shaft by universal joints, and hollow stub-axes pivoted to said frame by vertical pivots separate from and in vertical alignment with said universal joint, the shaft-sections passing through the stub-axes and being

operatively connected with said hubs at the outer ends of the stub-axes."

HUNT'S STEERING DEVICE

No. 641,514, to Charles W. Hunt, New York City.—This invention covers means for steering a motor-vehicle—an electric, as shown in the specifications, and adapt-

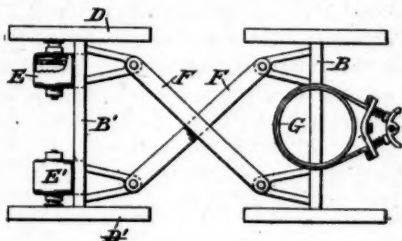


Figure 1.

ed only to a vehicle of this description—by means of augmenting and retarding the driving wheels which may be two or four in number.

The accompanying illustrations will show the form of running gear that is employed. The motors E and E1 drive the wheels D and D1 which are loosely journaled on the rear axle B1—although the inventor does not designate it as the rear axle, for reasons that will be pointed out farther on. The front axle B carries the front wheels, also loosely journaled, and is provided with "braking" mechanism G. This latter is not for the purpose

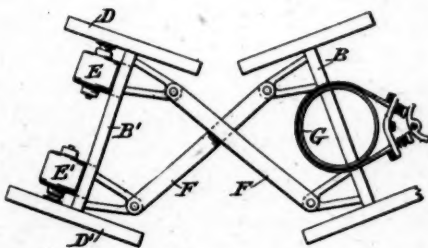


Figure 2.

of arresting the speed of the vehicle but of holding the two axles B and B1 parallel to each other by the aid of springs, as shown in Fig. 1. When it is desired to drive the vehicle around a corner greater power is given to one motor and less to the other. At the same time the spring brake G, which, normally, holds the axles parallel to each other, is released and the

greater power imparted to one wheel drives it faster than the other, and, as a result, the running gear of the vehicle assumes the position shown in Fig. 2.

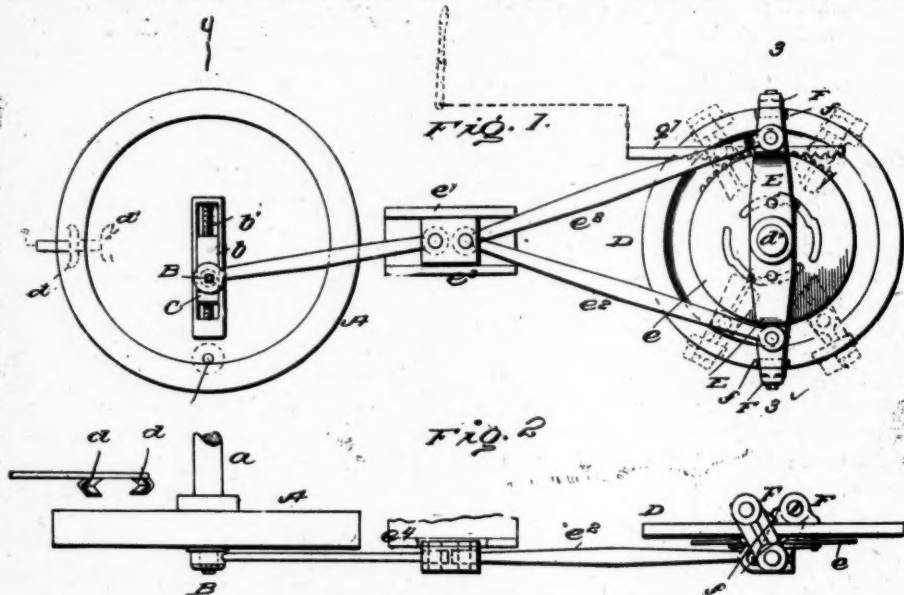
A brief study of the drawings will show that to make the running gear assume this position, it will first be necessary to drive the wheel D faster than the wheel D1 and if this is continued the wheels will be "cramped" until no further movement is possible and then—well, trouble. If, on the contrary, the axle B1 be made the front axle and the greater power be applied to the wheel D1, it will cause the running gear to assume the position shown in Fig. 2 and will carry the vehicle

said driving mechanisms whereby one of said wheels is retarded or accelerated with relation to the other of said wheels, and means to retard or check the swinging of the wheels."

MARTIN'S SPEED CHANGE

No. 641,313, to Andrew J. Martin, Buffalo, N. Y.—Mr. Martin's invention relates to the means for changing the speed of motor-vehicles by means of a forward or backward crank-pin of variable sweep set in a fly-wheel and actuating, by means of arms, a clutch.

In the drawings, Fig. 1 shows a side



MARTIN'S SPEED CHANGE GEAR.

successfully around a corner. It is fair to assume that the drawings, as they appear, which show B to be the front axle, are designed to mislead would-be imitators.

The drawings and specifications also show means of adapting the same invention to wheels carried on stub axles and of adapting it to vehicles in which all four wheels are driven by separate motors.

Four claims are allowed of which the first reads as follows:

"In a vehicle, the combination of wheels mounted to swing about a substantially vertical axis, independent driving mechanisms for said wheels, means to control

elevation of the mechanism and Fig. 2 a plain view. Fig. 3 is a section on line 3 3 of Fig. 1 and Fig. 4 a transverse section of the fly-wheel.

The fly-wheel A is carried on the motor-shaft a and is provided with a transverse slot into which is rotatably set a shaft b1, provided with a right-and-left-hand thread. Carried by this shaft b1 and threaded to it are the block b which carries the crank pin B and is carried on the right hand thread and the counter balancing-weight C which is carried on the left hand thread.

One end of the shaft b1 is provided with a bevel pinion b3 which meshes

with another bevel pinion b4 which is carried on a short shaft at right angles with the shaft b1. One end of the latter is provided with a wheel b6 having a V-shaped periphery, designed to travel between the V-shaped bars d and d1 ordi-

away from its center, imparting a greater or less motion to the bar e4.

This motion is communicated by the bars e2 e2 to the two arms E E of the clutch-wheel D, set loosely on the shaft ax. The ends of these arms E E are pro-

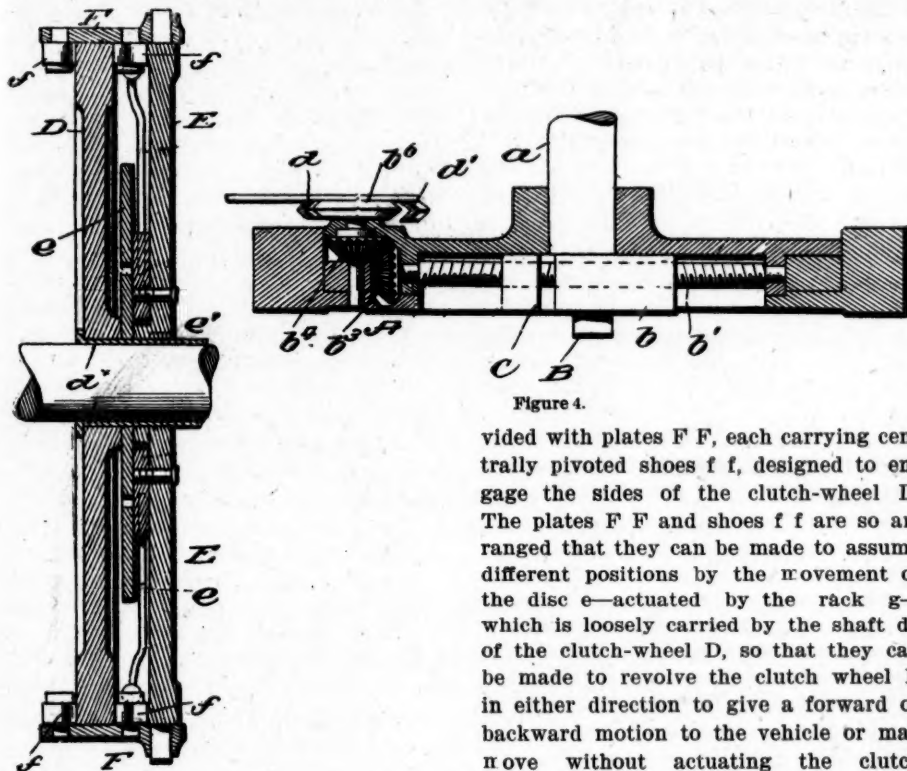


Figure 4.

Figure 3.

narly. One or the other of these bars d and d1 may be made to come into contact with the wheel b6 when it is desired to increase or diminish the speed of the vehicle, rotating the wheel b6 and through the bevel pinions b3 and b4, the shaft b1, which will simultaneously move the crank-pin-block b with its crank-pin B and the counterbalancing-weight C towards the center of the fly-wheel A or

vided with plates F F, each carrying centrally pivoted shoes f f, designed to engage the sides of the clutch-wheel D. The plates F F and shoes f f are so arranged that they can be made to assume different positions by the movement of the disc e—actuated by the rack g—which is loosely carried by the shaft dx of the clutch-wheel D, so that they can be made to revolve the clutch wheel D in either direction to give a forward or backward motion to the vehicle or may move without actuating the clutch wheel, therefore imparting no motion to the vehicle.

Eight claims are allowed, all depending for their value on a fly-wheel having a shiftable crank-pin. The first is as follows:

"In a motor vehicle, a fly-wheel having a shiftable crank-pin, a revoluble bearing therefor, a counterbalancing-weight also on said bearing, and means for revolving said bearing while the wheel is in motion."

ELECTRIC IGNITION DEVICES

The following description of ignition devices appears in the Autocar:

Fig. 1 is a skeleton diagram of the common form of high tension ignition, as used on the Benz car and on some of the earlier forms of gas and oil engines.

Fig. 2 is a similar diagram relating to the De Dion system of ignition.

Referring to Fig. 1, we may consider the current starting from the battery A, and passing along the wire to the spring B on the insulating rocker N. The end of this spring bears on the single bar commutator C, which consists generally of a metal strip on the periphery of the wood fibre block, the strip being metallicity connected to the second motion-shaft, with which it rotates. The current thus finds its way to the framework of the car, or in common parlance is grounded each time the strip comes in contact with the end of the spring B. The path of the current through the frame is indicated by the dotted line C D.

D is a brass pillar projecting from the insulating base of the induction coil, and is provided with an adjustable screw tipped with platinum. A spring F G is fixed to one end of the pillar F, and has at its other extremity a soft iron block G.

A platinum rivet E is placed in the spring, so that when the latter is in its normal position, the platinum on the spring makes contact with that on the point of the screw, thus providing a path for the current as far as the pillar F.

From F the primary winding p of the induction coil starts. This consists of a few layers of insulated copper wire, and is wound over a bundle of soft iron wires, which form the core H, whose end faces the soft iron block G. Over the primary coil many layers of fine silk-covered copper wire are wound to form the secondary coil, whose ends are connected up to the sparking points.

We have already traced the current to the terminal F, where the primary coil p commences, and it will be seen that when

the switch J is closed it has a clear run through the primary coil back to the battery by the wire which completes the circuit. The passage of the current round the primary coil, however, excites magnetism in the soft iron core H, which then attracts the block G on the spring G F, thus breaking the circuit at E, and stopping the flow of current in the primary coil.

This action causes the core H to lose its magnetic force, and the block G, in virtue of the spring on which it is mounted, flies back, and the circuit is remade at E, only to be broken again in the same manner. By careful adjustment of the screw in D a very rapid make and break action may be obtained, which takes place many times while the commutator bar C is in contact with the spring B, and during this period the passage of the battery current through the primary winding is rendered intermittent.

Before leaving the primary circuit, we should consider the action of the condenser K L. This is arranged as a shunt across the contact breaker terminals E and F, and consists of layers of tinfoil separated by paraffined paper. Alternate layers of the tinfoil are connected, as it

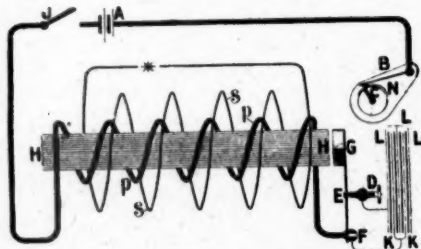


Figure 1.

were, in parallel, as shown, and the thick lines indicate the insulating material.

An electric current, particularly when its circuit includes the coil of an electromagnet, possesses a property analogous to the inertia of a moving body. When its flow is interrupted, it appears to collect its energy in an effort to jump the gap. This, in the case of the induction

coil, would result in a big spark at the contact breaker, were it not for the condenser, which receives extra current, and restores it when contact is again made.

Turning now to the secondary coil S, we find that this has no metallic connection with the primary, and every part of it is carefully insulated, so that the electricity obtained from it is wholly distinct from that supplied by the battery. The current from the secondary coil is a sympathetic or induced one, consequent on the interruptions in the primary current, and the disturbances in the magnetic state of the iron core.

It should be understood that the mere flow of a constant current through the primary coil would not produce a current in the secondary, but that interruptions on the former are necessary.

The function of the induction coil is to produce from a current of electricity of low pressure or voltage another current which may be small in quantity, but whose pressure or voltage is sufficiently high to enable it to overcome the resistance of the medium between the sparking points and to jump or spark across the gap.

The De Dion ignition is represented in Fig. 2, in which the various parts have been lettered to correspond with those in Fig. 1, whose functions are similar. It will be seen that the coil has no magnetically-actuated contact breaker, the current being interrupted by mechanically vibrating the spring F G. When the notch of the cam on the second motion-shaft comes round to the V-shaped black on the end of the spring, the platinum rivet E of the latter comes down on the platinum pointed screw at D, and makes contact. By careful adjustment of the screw the spring may be made to vibrate, causing rapid interruptions, as in the case of the ordinary coil, but in many cases this re-

sult is not attained, and the apparatus simply works as a switch, giving one make and one brake, and a good spark can be obtained by this method, especially if the contact surface be made greater.

The path of the primary current can easily be followed from the diagram. For convenience in wiring, the coil is fur-

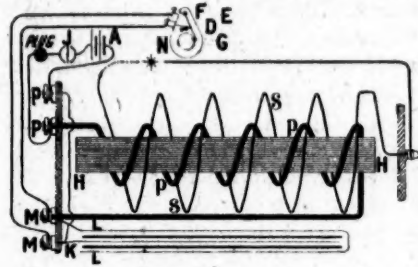


Figure 2

nished with four terminals in the primary circuit P P and M M, the outside P and M being connected.

Starting from the battery A, we may consider the current as flowing to the terminal P of the coil, and thence to the outside M, which is connected up to the contact breaker pillar F. From this point it finds a passage along the spring to E, through the platinum pointed screw, to the pillar D, and back by the wire to the other terminal M of the coil. Here the primary winding of the induction coil commences, and, after the current has passed through this, it arrives at the inner terminal P, from which it passes along the wire, through the plug, and handlebar switch J, back to the battery. The condenser is connected up to the terminals M M.

By comparing the two diagrams, it will be seen that the essential difference between the two systems is that in one case the trembler or contact breaker is actuated magnetically, and in the other case mechanically.

NEWS OF THE TRADE

WILL LEASE DELIVERY WAGONS

Boston, Jan. 20.—“Things are coming our way with a rush,” said Superintendent Neffel of the New England Electric Vehicle Transportation Co. last week to a Motor Age representative. “We are now figuring with four of the big mercantile houses of the city to give them an electric vehicle delivery service. The deal is so near completion that I shall be able to give their names within a few days. The company will sell no more delivery wagons outright, but will rent them to the firms desiring them, furnishing our own drivers, storage, battery charges and repairs. Thus the lessee will get more satisfactory service because the handling of the wagons will be in expert hands and this will also reduce the cost to them.”

The first definite statement of the cost of storage battery delivery service the Motor Age has secured from Mr. Allen J. Edminster, chief engineer for J. G. and B. S. Ferguson, wholesale bakers of this city. Mr. Edminster says: “We have one electric delivery wagon which has been run the past ten months, and I find the cost for power to have been 1½ cents a mile for this period. Other expenses, such as repairs and care, have been no more than the cost of keeping one horse shod.”

This company will put into commission within a few days a similar wagon, in which the power will be steam. It has been built for the firm by the Clark Marine Engineering Co.

The International Automobile Construction Co. has been incorporated by Boston men under Maine laws, with a capital of \$100,000, of which \$400 has been paid in. Rupert M. Gay is president and W. H. Ricker treasurer, and these, with Charles E. Fay, another incorporator, form the company at present. Both Messrs. Gay and Fay are graduates from the cycle business. The carriage, built from designs by Mr. Gay, is of the

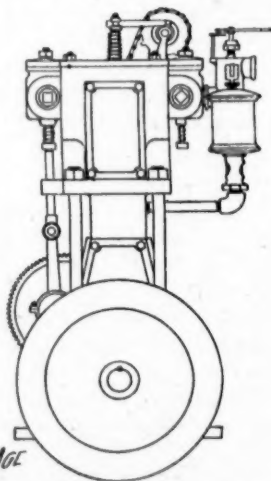
gasoline pattern and resembles closely the usual seat-for-two runabout.

HUNTING FACTORY SITE

Stevens Point, Wis., Jan 22.—J. H. Curtis, Mr. and Mrs. M. M. Shessown, Carl L. Jones, and John Trier, representing the Western Automobile Co. of Chicago, have been in the city with one of their vehicles endeavoring to interest the businessmen in securing the location of their manufacturing plant here in the old Wisconsin Central shops. They promise to employ from 500 to 600 men.

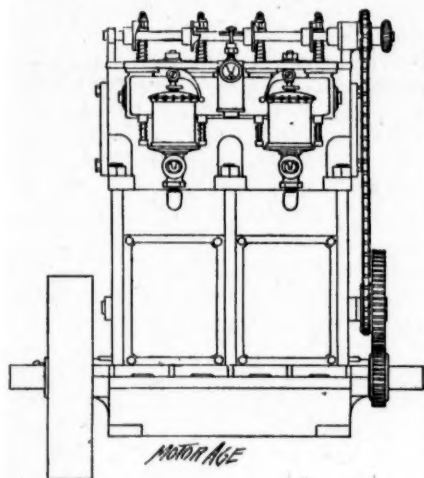
BUFFALO GASOLINE MOTOR

The accompanying illustrations show the 4½ horse-power, four-cylinder gasoline engine, designed for use in motor vehicles, and marketed by the Buffalo Gasoline Motor Co. The engine is fur-



nished either upright or horizontal, and occupies a space only eighteen by twenty inches and weighs 175 pounds. The makers claim to have the most perfect igniters used in gasoline engines, stating that the speed of the engine can be varied from 100 to 1,500 revolutions a

minute, and that they have run a vehicle fitted with one of their motors more than 3,000 miles without a single adjustment of the igniters. One mixing gasoline valve operates the four cylinders. The



company offers to give a practical demonstration of the merits of the motor to any one interested who will visit their factory at the corner of Dewitt and Bradley streets, Buffalo.

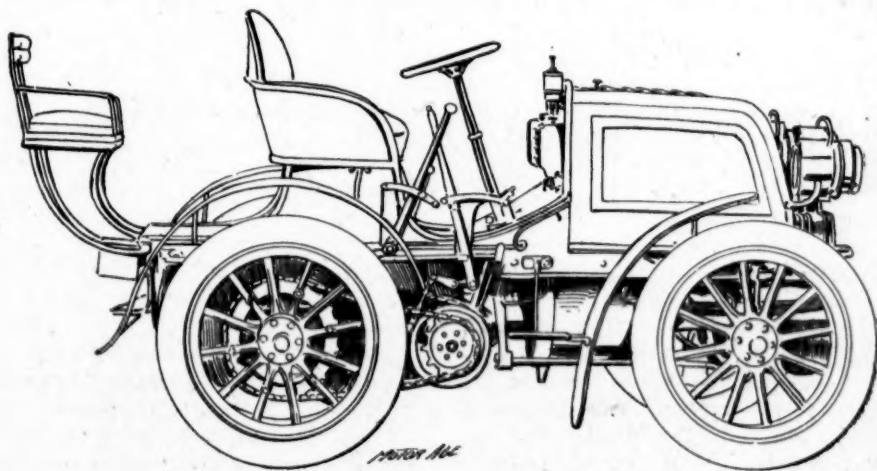
DAIMLER RACING CAR

The accompanying illustration shows the twenty-four horse-power racing car built by the Daimler Motoren Gesellschaft, at Connstatt, Germany. The max-

imum speed to which the car is geared is forty-six miles an hour. It is stated that grades of seven percent can be climbed at a speed of twenty-two miles an hour, providing the surface be of fair quality. The vehicle is provided with reversing gear, three brakes and a cooling apparatus which is of the marine condenser type, with a fan to induce a circulation of air when the vehicle is at rest. The consumption of water for cooling is scarcely appreciable. Doubtless the machine will be heard from during the coming season.

PRESTON VEHICLE TIRE

The Preston tire for vehicles and bicycles is the invention of J. F. Preston, and is manufactured by the Preston Tire & Hose Co., at Everett, Mass. The fabric is not made of ordinary cotton duck, as is that of most pneumatic tires, but is a seamless, woven tube, made on a special loom, similar in manufacture and appearance to the ordinary fire hose. It is composed, in the vehicle tire, of two or more plies securely woven together and reinforced by other plies of different widths, commencing at a point about half way around the tire on the tread side. One ply is made to cover this space and other plies of constantly decreasing width are added, all woven together, the whole making a reinforcement that is similar in appearance and



SPEEDY FRENCH RACING VEHICLE.

in action to a leaf spring. When a stone or uneven surface comes into contact with the tread of the tire, each ply gives a little easier than its predecessor, distributing the jar, to the comfort of those in the vehicle, and to preservation of the life of the tire.

The tire is capable of withstanding very high pressure without injury and is claimed to be practically puncture-proof, having been submitted to the most severe tests without showing any sign of puncture.

The company, in addition to making fire hose, and the complete vehicle and bicycle tires, also make the fabric, which they furnish to other tire makers to manufacture into complete tires under license.

BUY AUTOMOBILES IN CHICAGO

Fifty cabs and fifty broughams have been ordered by the General Carriage Co. of New York from the Woods Motor Vehicle Co. Six cabs have already been shipped to New York, and the rest of the order will be filled at the rate of ten a week. The Woods company yesterday received an order for fifty cabs from Buffalo. The Woods company now has twenty-five cabs in daily service in Chicago and twenty-five more in the factory, which will be out within a few weeks. Mr. Woods said yesterday that the company would have 100 vehicles in daily service in Chicago within the year.

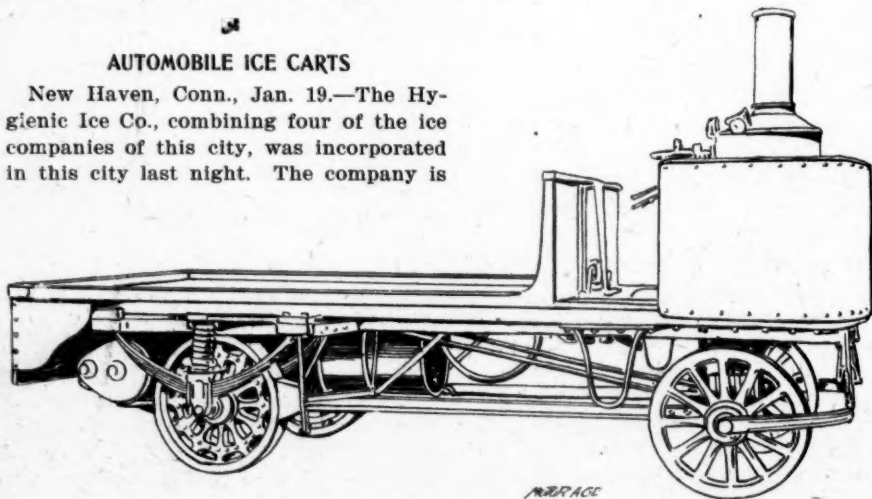
AUTOMOBILE ICE CARTS

New Haven, Conn., Jan. 19.—The Hygienic Ice Co., combining four of the ice companies of this city, was incorporated in this city last night. The company is

capitalized at \$500,000. General Manager Snell said to-day that the company intended to introduce automobiles in the delivery of ice the coming spring, and to purchase a number of large automobiles for the purpose immediately. He says the new system will do away with the dangers of the present method of delivery and will be cheaper. Mr. Snell says that horses will not be used in the ice business here at all in a year or two.

Foster & Co., of Rochester, manufacturers of automobiles, are about to issue a catalogue of their line of vehicles. They have now complete four different models, and these can be had in either steam or electricity. At an interview with a member of the firm, a Motor Age representative learned that the delay in getting their carriage out was caused by their inability to get supplies as ordered. "It has been next to impossible to get motors, owing to the large demand, and we have had to disappoint many of our customers on this score alone," he said.

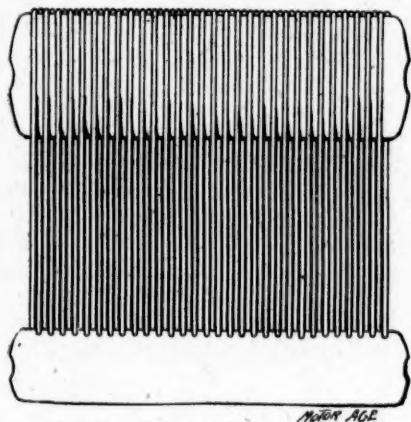
The Locomobile Co. have what they claim to be the lightest auto for carrying two people yet shown. It weighs only 315 pounds and was shipped to the New York show by express.



SIMPSON-BODMAN TRUCK—Carrying Capacity 11,000 Pounds.

DE YARMETT-HAYES BOILER

The accompanying illustrations, for which the Motor Age is indebted to Power, show the principles on which the De Yarmett-Hayes water-tube boiler is



DeYarmett Hayes Boiler—Side View.

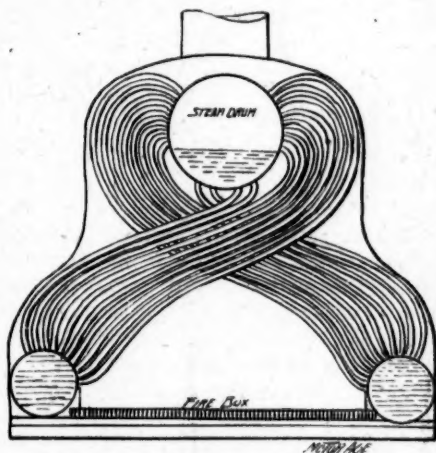
constructed. This is a construction which should be easily adapted to automobiles.

In this boiler every effort has been made to make the tubes conform with the course that water naturally pursues when heated. The tubes are arranged longitudinally of the drums in series; and are of the form of easy reverse curves, which admit of free expansion and contraction without injurious strains. These series of tubes cross each other above the fire grate, so that they form a baffle for the flames and heat-waves, causing them to pursue different paths. It will be noted that the longer tubes, which discharge above the water line, are in the greatest heat zone of the gases and are crossed several times by the flames, while the shorter tubes, which lead from the bottom of the steam-drum, are less exposed to the heat and are crossed but once by the flames. This arrangement makes a considerable difference in the temperature of the longer and shorter tubes, which difference of temperature shows a perfectly reliable circulation. The direction of the current is always constant in each

tube; rising in those tubes which discharge above the water level and descending in those tubes which lead from the bottom of the steam drum. This circulation makes the boiler proof against steam pockets and the rapid movement of the water keeps the tubes clean and free from scale.

Other features of this boiler are:

Its ability to steam rapidly and cool off suddenly without injuring the tubes by strains caused by expansion and contraction; its simplicity of construction, there being but one size of tubing used throughout; its compactness, it having



DeYarmett-Hayes Boiler—End View.

the largest amount of heating surface obtainable in a given space; its low center of gravity; and its large grate area. The inventor of this boiler is Edward C. De Yarmett, Richmond, Va.

Such a periodical as the Engineering Magazine, in its January number, fathers a contribution which claims that there have been no radical changes in the construction of automobiles during the past two years. Were the task a less onerous one, it might be of some avail to attempt to point out wherein the magazine is in error.

GENERAL NEWS AND COMMENT

GOVERNMENT APPROPRIATION ASKED

Washington, Jan. 19.—The librarian of congress has asked for an appropriation of \$1,845 for the purchase of an automobile for the use of the library. At present a horse and wagon is used for the delivery of books to members of congress, at an annual cost of maintenance of nearly one-third what a motor vehicle would cost. The librarian points out that an electric automobile would cost almost nothing to operate, as the library has a powerful electric plant at which the storage batteries could be charged as often as necessary. It is claimed, therefore, that the purchase of an automobile would be real economy, besides giving a better service to patrons of the library than it is now possible to do. The desired appropriation will undoubtedly be granted.

BITS OF EARLY HISTORY

Washington, Jan. 20.—The increasing use of automobiles in this city makes it interesting to trace the development of the vehicle's history back for many years. This has been done in a little document issued by the government. It is replete with interesting facts, and says, among other things, that from the most reliable sources it has been ascertained that automobiles were made more than 125 years ago by Cugnot in France. It was a steam-propelled wagon of an extremely crude appearance, but was the forerunner of the successful motor vehicles now seen in operation. Up to a year or two ago Paris has always been the hotbed of automobiles, some of the great inventors in this line being Hancock, Church, Dietz, Gibbs, and Frazier.

Hancock did his work during the year 1825, but did not complete his first motor until after five years' work. It was known as "The Infant," according to the automobile history, but after two or three runs was declared to be hardly a success. A year later he built another wagon that

cost \$3,500. It burned about twelve tons of coke per hour and weighed about three tons. It could only travel, on the best roads, at a speed of ten miles an hour, but withal could be termed the first successful motor vehicle.

Church, later on, built a vehicle to carry fifty passengers, being all out of proportion, and a few years previous to this time one Gurney built a carriage in England, propelled by steam, that made such frequent trips to the repair shop that it was retired. It could not stand the severe strains of the uneven roads. At that time the railroads were being improved upon, while little attention was paid to automobiles. It was along in the '50's when Richard Dudgeon constructed a wagon propelled by steam, to carry ten people.

Ten years ago France began to talk of the automobile industry, and has advanced with rapid strides, until it is now considered by many to lead in this line, with America close on its heels. It was not until six years ago that America began to pay much attention to the business. Now, however, American machines are rapidly taking the lead, as American bicycles have done in the past.

COVER ILLUSTRATION

The cover illustration of the present issue of the Motor Age shows the "park phaetonette" manufactured by the St. Louis Motor Vehicle Co. The carriage is fitted with a six-horse-power gasoline motor, has 34-inch wire wheels, ball bearings to front wheels and roller bearings to rear wheels, and may be had with either 1¼-inch solid rubber or 3-inch pneumatic tires. Its maximum speed is eighteen miles an hour. This company also makes other descriptions of vehicles with five, six, seven, eight and ten horse-power motors, geared from fifteen to twenty miles an hour and capable of climbing grades up to twenty-five percent, according to the claims of their cat-

alogue. The price of the vehicle illustrated is \$1,000.

LATEST FORM OF SNOBBERY

One of the most amusing things that the coming of the motor-vehicle has brought to light is the cheap snobbery that assumes the form of an affected love for the horse—"that most noble and intelligent of all the servants of man," as they say—by people who never came nearer owning a horse than to take an occasional ride on the tail end of an ice-wagon, in their childhood days of less cheap knowledge but greater sincerity. Nor is this class apt to become purchasers of motor-vehicles—because of lack of cash. But to cover up their poverty they tell, in stilted language, of the thrilling experiences of driving a spanking team or a high bred roadster, which, in the minds of these wiseacres, is alleged to be wholly lacking in the new combination. To use one of their oft-repeated stock expressions, "Why not ride in a trolley car and be done with it?"

To be sure, this form of raillery accomplished the purpose for which it is designed, that of drawing attention, for a few brief moments, to the snobs who give it utterance—for there are few people who have not at least some respect, if not regard, for the really fine animal whom man has utilized since before the dawn of history, and to pose as the "friend of the dumb but faithful beast," gives a momentary reflected importance to the man who adopts this latest form of snobbery. Perhaps he would not relish it so much if he were capable of sufficient independent thought to realize that to make his point he raises the horse—or degrades himself—to a position where the brute is on the higher plane. Your progressive thinker soon sees through the sham and laughs in his sleeve at the horse's new found friend.

The snob can, however, do no harm, unless it be to fix a prejudice in the mind of some unthinking listener who has the money and inclination to buy a self-propelled vehicle. To those who are restricted to drives over the same road day after day, it may be that there exists some need for a sensation that will re-

lieve the monotony of the daily trip. But with a motor-vehicle there are fewer restrictions as to speed than with a horse or span. Two or three or four times the distance may be covered in the same length of time. The route may be varied and the sensation of driving a motor-vehicle at twenty to thirty miles an hour may not be productive of sensations, but the snobbish "friend of the horse" would hardly say so after his first ride. The lover of sensation will at least be spared the painful sight of the poor beast which, faltering and covered with lather, can no longer respond to the cheerful "G'lang" or the keen sting of the whip.

AUTOMOBILE SPORTSMANSHIP

Those who know the least about a subject are those who are most apt to make egregious blunders in discussing it. On this ground, it may be safely asserted that the correspondent who contributed the following diatribe against automobile sportsmanship has no closer acquaintance with the horseless vehicle than may be gathered by standing on a sidewalk while an automobile threads its way along a crowded street or by a ride in a trolley car:

"Now, it strikes me forcibly that if the man who automobilizes is a sportsman, the engineer of any of our fast express trains is a kind of triple-extract, double-distilled sportsman. I am not going to discuss the automobile. No doubt it is all right in its way, a mighty useful and maybe a fascinating machine to some, but where does the sporting end of the thing come in? Provided the operator has the necessary mechanical skill and has not purchased one of the cheap machines that periodically blow up, he and his passengers are as safe as if they had their knees under the mahogany. Hardship or danger is regarded as an essential part in a greater or less degree of all sports. Where does such an element come in in the management of an automobile? Can any one possibly compare the game with the sport of driving four, tandem, a team of roadsters, or even a good single horse."

There are two kinds of sport, one in which the sportsman pits his own muscle.

his own skill, and his own brain against the muscles, skill and brains of other competitors. This is the highest form of sportsmanship; it is the sportsmanship of the gentleman athlete. For those who are too old, too feeble or too indolent to excell in this form of sport, there remains the sportsmanship in which skill and brain play the leading part, aided by animal or mechanical auxiliaries. To condemn automobilism as lacking the elements of sportsmanship, would be to condemn yachting and almost all forms of aquatic sports, billiards, bowling and scores of other pastimes which are recognized as affording opportunity for the display of sportsmanship in a high degree.

SYNDICATE ROT

The following amusing skit is from the pen of the well known syndicate writer, Harry Stilwell Edwards. To those who are familiar with the negro—not the "levee sport," not the trained northern servant, but the Simon pure southern negro—the article will have a more than passing interest:

The appearance of the automobile in Georgia has created a sensation somewhat less spectacular than that caused by Sherman's advent, but one whose effects may prove more direct and lasting. For the moment it surprised and frightened everything, from the farm chicken up to the turkey buzzard, which under the protection of law sows hog cholera and yellow fever microbes broadcast from Maryland to Texas. It is recorded upon the authority of neighborhood observers that the latter, after following the machine a week, fled back to Cuba in despair, convinced that the thing would never die, or if dead prove edible. As for the country negro, he invariably gives it all the space that lies between the two road fences, as well as such stretches of the field beyond as can be covered in the limited time allowed.

Next to the negro, the most prominent figure of the southern landscape that has shown signs of nervous prostration on the approach of the automobile is a well known farm animal bred in old Kentucky. Mules that have worn all sorts of home-made har-

ness and mortgages with docility and have endured all the slings and arrows of outrageous fortune for a lifetime with no kicks coming or going, that have stood at railway crossings without the tremor of an eyelid while express trains thundered through their scattered whiskers and news-butchers dropped peanuts into their ears, evinced at sight of the automobile a spasmodic inclination to walk about like a man and fall over dashboards.

The coming contest is of interest even to outsiders. It is the oughtomobile versus the automobile; the tired motor versus the tired mule. Small wonder that Scipio Africanus is worried. The time approaches when, in the contest of the factories for cheap cotton, the cost of marketing the staple is to be reduced by the use of automobiles in some form upon the level roadways of the south. The pair of oughtomobiles which at a snail's pace draw three bales of cotton to town, to say nothing of sleepy Scipio on top, must give place to the machine which will move along briskly with half a dozen vans of as many bales each.

Scipio's imminent danger springs from a constitutional defect—a defect that is exemplified in the fact that the whirr of wheels puts him to sleep when he enters a factory. On Saturday, in the country, he nods on his sack of corn as soon as the distant grist mill begins to sing to him. And it doesn't by any means require expensive machinery; the monotonous lullaby of a ten-dollar wagon in the August sun is inevitably effective. This constitutional defect is not curable in one generation, and no man possessing it may be safely trusted with the helm of an automobile. An automobile with a cotton train behind and anxious to overtake the steerer on every down grade calls for anything but slumber. With the mule it is different. He may be depended upon to lie well back in his breeching and, if necessary, coast with everything, including his ears, thrust forward, and he will keep the middle of the road. But the automobile is as yet neither discreet nor experienced.

What is true of Scipio upon the wagon is true of him upon an improved farming implement. To those who have seen him mounted upon a wheeled harrow halted in the shade of a persimmon tree, where his mules have wandered with him at 11 a. m., the whole outfit asleep, it is very apparent what will happen when plows or disks are hung under the new motors and the colored man-with-the-hoe has been optimistically promoted. He may learn eventually to keep awake when on duty; he may learn to wander about, cake-walk, 'possum-hunt and hypnotize poultry less after bedtime, and so approach the new crisis with more capacity for resisting the seductive glide of rubber tires—but it will be long after the automobile idea is in full operation. Holding the wobbly plow handles, with an occasional root to throw him across the row, with a pressing necessity for supplying certain words which

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are part of the Kentuckian's hereditaments, and with the chance of walking into a ground rattler's siesta and yellow jacket conventions, he manages to keep in partial touch with consciousness. But put him on an automobile of a summer day, the novelty gone, and he would be down among the cogs and other old things in twenty minutes.

And with Scipio will pass out the mule. Indeed, here is a genuine tragedy outlined. Displaced in the south, not attractive as food, canned or otherwise, nor valuable as a friend of the family, the mule threatens to fall into innocuous desuetude along with the mammoths and retired presidents of republics. There was a reasonable expectation for a while that he might survive the rush of change as an adjunct of civilized warfare, but his stubborn persistence at Daiquiri in trying to swim back to Tampa when pushed overboard from the transports and his recent fatal elopement with all the artillery and ammunition of two British regiments because somebody rolled a stone between his legs, have aroused a suspicion that civilized warfare is bad enough without him. The mule is so doomed. An abler invention is to displace him.

CURRENT BREVITIES

Alencon, France, boasts of an automobile ambulance.

Akron, Ohio, is to have a motor-patrol wagon, the vehicle being almost completed.

At a recent meeting of the automobile club of France there were no less than ninety-nine applications for membership.

The Washington Electric Vehicle Co., a New Jersey corporation, has filed papers decreasing its capital stock from \$6,000,000 to \$1,250,000.

German automobile makers have petitioned for a heavy tariff on motor-vehicles in order to prevent competition from American manufacturers.

Some of the daily papers are announcing, as items of news, that traction engines haul wagons along country roads, just as if they hadn't been doing this for years and years.

It is reported that a line of motor-omnibuses is to be run by a company being organized in Milwaukee. The projectors believe that there is a class of patronage to be had on Prospect and Grand avenues, two of the best residence streets in the Cream City, that will support the enterprise. Electricity will be used for motive

power. The fare will be five cents. The 'buses are estimated to cost \$1,600 each.

The "first automobile in the United States" threatens to become as numerous as the "original McKinley man" of whom we heard so much not a great while ago.

The use of motor-carriages has increased to such an extent in Buenos Ayres that a club—the Argentine Turning Club—has been organized in that place.

Who shall question the economy of using the motor-carriage, now that W. K. Vanderbilt and his wife have made an extended tour of France and Italy at an expenditure of eighty cents a day.

The power to establish motor-omnibus lines gives the citizens of communities where the street railway companies fail to provide adequate accommodations, a powerful lever to force the companies in line. Cleveland is the latest city to level this threat at a public carrier.

One of the advantages of autocars over horses is that the former have not to waste several precious hours being "turned up" on a frosty morning, says an exchange. A horse has to have sharpened shoes, and then can hardly stand, while the autocar runs safely over snow-bound roads.

It is stated that automobile omnibuses will be substituted at once for the old horse-drawn stage coaches of Fifth Avenue, New York City. The omnibuses will not be allowed to be crowded, and the little sign bearing the word "Full" will be displayed when every seat is taken. This is the general European custom.

At last the undisputed reign of the automobile over Paris has ceased. A chauffeur has actually been arrested, fined and sentenced to a month's imprisonment for allowing his machine to get from under his control and knock down and injure a market woman. This is the last thing that could have been expected

USERS OF MOTOR-VEHICLES

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in Paris where everyone was supposed to worship the horseless carriage.

Score one for the electric cab. One of these vehicles had a head-on collision with a trolley car in Chicago recently. The trolley had to be dragged to the barn for repairs, while the cab continued on its way.

A dashing female, quite unknown to the denizens of that southern town, has set Galveston agape, by driving a motor-carriage through the streets of the town with all the abandon of a thorough-going chaffeur. The cotton brokers are sparing no efforts to ascertain her identity, but, at last reports, without success.

Inventors of devices applicable to automobiles are invited to communicate with the advertiser who is prepared to furnish working capital for the completion or improvement of devices (patented or not) that are mechanically correct and of practical utility. No attention will be paid to dreamers nor will the advertiser undertake the formation of any company except on a sound, businesslike basis. No multi-million dollar corporations floated. Letters to receive attention must give full details of inventions, time and financial backing necessary to put them in condition to begin manufacturing, approximate cost of production and value placed on inventions. Address in confidence, INVESTOR, care of The Motor Age, 324 Dearborn St., Chicago.



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